

Montana Board of Oil and Gas Conservation

Environmental Assessment

Proposed Action: Approve Drilling Permit (Form 22)

Operator: Oasis Petroleum North America LLC

Well Name/Number: Carson Federal 2658 13-17H

Location: NW NE Section 17 T26N R58E

County: Richland, MT; Field (or Wildcat) Wildcat (Bakken Horizontal)

Air Quality

(possible concerns)

Long drilling time: No, 30-40 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation test, 20,359' MD/10,340' TVD.

Possible H2S gas production: Yes, slight H2S possible, Mississippian Formations.

In/near Class I air quality area: No Class I air quality area in the area of review.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☒ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: If there are existing pipeline for natural gas in the area then gas must be tied into system or if no gathering system nearby associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to oil based invert drilling fluids for intermediate casing hole. Horizontal hole will be drilled with saltwater. Surface casing hole will be drilled with freshwater and freshwater mud system.

High water table: No high water table anticipated in the area of review.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Otis Creek, about 3/10 of a mile to the southwest. The Missouri River is about 1.5 miles to the north from this location.

Water well contamination: No, closest water well is about 7/10 of a mile to the northeast. The operator on his permit to drill indicated that they were setting 1964' of surface casing to cover the Base of the Fox Hills Formation. This well will be drilled with freshwater and freshwater mud to 1964' and steel surface casing will be run and cemented to surface to protect groundwater.

Porous/permeable soils: No, sandy silty clay soils.

Class I stream drainage: Yes, Class I stream drainage is the Missouri River in the area of review.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☒ Closed mud system

☒ Off-site disposal of solids/**liquids** (in approved facility)

☐ Other: _____

Comments: 1964' surface casing will be drilled with freshwater, steel casing will be run to 1,964' and cemented back to surface, to protect freshwater zones in adjacent water wells, also covering the Fox Hills aquifer. Adequate surface casing and operational BOP equipment will prevent problems.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, stream crossings anticipated. Will be crossing only cross ephemeral drainages.

High erosion potential: Possible high erosion potential with moderate cut and fill slopes, location will require a moderate cut of up to 61.1' and a moderate fill of up to 50.5', required.

Loss of soil productivity: No, location to be restored after drilling, if nonproductive. If productive, unused portion of this drillsite will be reclaimed.

Unusually large wellsite: No, a very large well site, 530'X320' designed for a dual well placement, Poppy Federal 2658 12-17H and the Carson Federal 2658 13-17H.

Damage to improvements: Slight surface use appears to be grazing land.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be over existing unnamed county roads and ranch trail. New access road will be built into this location, about 2177' into this location from the existing county road. Oil based invert drilling fluids will be recycled. Completion fluids will hauled to a commercial Class II disposal. Cuttings and solids will be buried/solidified on site in the lined cuttings pit. The lined pit will be allowed to dry before the pit is backfilled. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residences within a 1 mile radius from this location. The town of Bainville, Montana is about 9 miles to the north.

Possibility of H2S: Yes, slight from Mississippian Formations.

Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Piping Plover, Interior Lease Tern and Whooping Crane. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website indicates, fifteen (15) species of concern: Arctic Shrew, Baird's Sparrow, Le Conte's Sparrow, Nelson's Sparrow, Sprague's Pipit, Burrowing Owl, Piping Plover,

Sedge Wren, Yellow Rail, Bobolink, Whooping Crane, Horned Grebe, McCown's Longspur, Smooth Greensnake and Otter Skipper. NH Tracker website list one (4) potential species of concern: Hayden's Shrew, Short-eared Owl, Alkali Bluet, and Lance-tipped Darter.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: On Federal Land.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments:

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: Wildcat well. No concerns

Remarks or Special Concerns for this site

An exploratory single lateral horizontal Bakken Formation test: 20,359' MD/10,340' TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected, some short term impacts will occur, but can be mitigated.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/John Gizicki

(title:) Compliance Specialist

Date: March 12, 2014

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Richland County water wells

(subject discussed)

March 12, 2014 _____
(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Richland County, Montana

(subject discussed)

March 12, 2014

Montana Natural Heritage Program Website

(Name and Agency)

Heritage State Rank= S1, S2, S3, S4 Location T26N R58E

(subject discussed)

March 12, 2014 _____
(date)

If location was inspected before permit approval:

Inspection date: ____

Inspector: _____

Others present during inspection: _____